

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number
WO 2005/059003 A1

(51) International Patent Classification⁷: **C08G 63/08**, 63/12

(21) International Application Number:
PCT/US2004/041942

(22) International Filing Date:
15 December 2004 (15.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/529,716 15 December 2003 (15.12.2003) US

(71) Applicant (for all designated States except US): **THE CHILDREN'S HOSPITAL OF PHILADELPHIA** [US/US]; 34th Street and Civic Center Boulevard, Philadelphia, PA 19104 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SHASTRI, Venkatram, P.** [IN/US]; 1303 Hillmeade Drive, Nashville, TN 37221 (US). **XU, Xiao-Jun** [CN/US]; 4209 Chester Avenue, Apt. C-15, Philadelphia, PA 19104 (US).

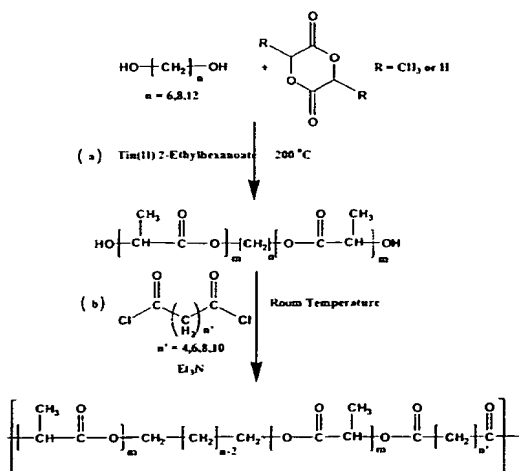
(74) Agent: **VOLIN, Marina, E.**; CAESAR, RIVISE, BERNSTEIN, COHEN & POKOTILOV, LTD., Seven Penn Center, 1635 Market Street, 11th Floor, Philadelphia, PA 19103 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: NOVEL POLYESTERS



(57) Abstract: A polyester including a macromeric unit, wherein the macromeric unit has (a) at least two lactone derived units, (b) an initiating core, and (c) a coupling unit, wherein the initiating core is linking the at least two lactone derived units to form a macromerdiol and wherein the coupling unit and the initiating core have a carbon chain of a length sufficient to alter hydrophobicity of the polyester, and thereby enable the polyester to degrade according to a surface erosion mechanism. The polyesters of the present invention are suitable for a wide range of biomedical applications including drug delivery, imaging, scaffolding for tissue engineering, coating of various surfaces such as for example implantable devices as well as colloids and microparticles. Figure 1 is a reaction scheme depicting the preparation of polyesters of the invention.



Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.